REPORTS FROM THE Scientific Board

STRESS AND HEART DISEASE*

BETWEEN 1953 and 1962 the Committee on the Effect of Strain and Trauma on the Heart and Great Vessels of the American Heart Association investigated this subject. The detailed results were published in the journal *Circulation,* volume XXVI, October 1962.

Litigation in this field is beset by diverse medical opinions which may lead to legal decisions not in accord with acceptable scientific knowledge. The values of authoritative studies such as the one mentioned are relatively lost if physicians in general are not informed of the results. Communication of some of the conclusions drawn from the study may stimulate physicians to study the details of the original report.

Approximately 50 per cent of men over age 45 have a significant degree of coronary atherosclerosis. In many of them the condition is asymptomatic at normal activity, but in some of them symptoms of angina pectoris may develop under conditions of unusual stress or strain. "Coronary insufficiency" leading to patchy or only microscopic infarction of heart muscle may result from the natural progression of the coronary disease even with the subject at rest, or it may come about under certain stresses. During an attack of either type, death may occur suddenly, presumably from disturbance of rhythm. Seldom is sudden death from coronary artery disease associated with fresh coronary thrombosis. No single clear explanation to establish that physical effort will cause precipitation of coronary occlusion is acceptable to all pathologists. Except for situations causing acute lowering of systemic blood pressure (shock, hemorrhage, tachycardia or abnormal heart rhythm), acute myocardial infarction is felt to be an unexplained occurrence without proven relationship to any precipitating cause. The Committee could find no clinical or pathological method to determine a causative relationship between a typical coronary thrombosis with infarct and any given event. At the same time, it recognized that coronary insufficiency may result from factors of stress or strain; and if clinical or electrocardiographic evidence became apparent while such factors were at work, that would be presumptive of causal relationship.

In the absence of acceptable scentific proof (with the rare exception of heart strain secondary to occupational pulmonary disease), the Committee recommended that heart disease be not considered as arising out of employment. It did conclude, however, that heart failure (whether of congestive type, of coronary insufficiency type or of myocardial infarction type) should be considered related to physical or emotional exertion if onset occurred while the individual was undergoing clearly unusual stress. No criteria were found acceptable to the Committee to establish a relationship of effort or emotion to intimal hemorrhage. It was recognized that in other types of heart disease (not coronary disease) strain or trauma could precipitate other serious disorders in the circulation.

Among many recommendations submitted by the Committee was the encouragement of further studies in an attempt to define what part emotional or physical stress may play etiologically in coronary artery disease and in bringing about its overt manifestations.

*A statement from the Committee on Scientific Information of the Scientific Board, California Medical Association.